

NEW TAXA AND COMBINATIONS IN MACHAERIUM (LEGUMINOSAE). III.

Velva E. Rudd, Smithsonian Institution

Among the poorly known species of Machaerium is M. ulei Harms, from Bahia, Brazil. The holotype, in Berlin, was destroyed but, fortunately, is represented by a fragment and photograph at F and by isotypes at G, K, L. Examination of these specimens has revealed dimorphic anthers, a character not known in Machaerium. In addition, superficially, M. ulei does not resemble any other species of the genus. Harms, himself, questioned its position in Machaerium.

Affinity with the genus Poecilanthæ was considered but no known species could be matched. Dr. Roger Polhill kindly checked the type of P. parviflora Benthams, at Kew, and excluded that as a likely synonym. Recently, among collections from Bahia sent to the New York Botanical Garden for determination, Dr. Mary Arroyo found two specimens that are identical to M. ulei. This additional material confirmed our suspicion that a new species of Poecilanthæ was represented. The following transfer is, therefore, necessary:

POECILANTHE ULEI (Harms) Arroyo & Rudd, comb. nov.

Machaerium ? ulei Harms, Engl. Bot. Jahrb. 42: 214. 1908.

Type: E. Ule 7248, Brazil, Bahia, "Strauch in der Cotinga bei Calderão, October 1906" (holotype B destroyed, represented by fragment F and F neg. 2292 ex B; isotypes G, K, L).

Additional collections: Brazil: Bahia: Ilheus, Centro de Pesquisas do Cacau, Belém & Magalhães 596 (NY), 630 (NY).

Another putative species of Machaerium, Drepanocarpus mucronulatus Benthams ex Hemsley (Diagn. Pl. Nov. 8. 1878), non Machaerium mucronulatum Martius ex Benthams, 1837, has been found to be Aeschynomene amorphoides (S. Watson) Rose ex Robinson, non Ae. mucronulata Benthams, 1840. No new transfers are required. The holotype is at Kew, T. Coulter s. n. "Mexico: Bolaños, Guadalupe." "

Further study of the genus Machaerium indicates that several more taxa should be recognized or new combinations made, including two undescribed species indicated in preliminary manuscript or in the herbarium by the late Ellsworth P. Killip.

MACHAERIUM ACUTIFOLIUM Vogel var. PSEUDACUTIFOLIUM (Pittier) Rudd, comb. nov.

Machaerium pseudacutifolium Pittier, Bol. Soc. Ven. Cien. Nat. 7: 148. 1941. Type: H. Pittier 12484, Venezuela, Guárico, Mesa de El Sombrero, in savanna, 10 September 1927 (holotype VEN; isotypes A, G, M, MAD, NY, US).

MACHAERIUM ACUTIFOLIUM Vogel var. ENNEANDRUM (Hoehne) Rudd, comb. nov.

Machaerium enneandrum Hoehne, Arq. Bot. Estado S. Paulo, ser. nov. 1: 32, 1938. Type: J. G. Kuhlmann (Comissão de Linhas Telegráficas Estratégicas de Mato Grosso ao Amazonas no.) 424, Brazil, Mato Grosso, "Caminho para Porto Velho do Rio Arinos," November 1914 (holotype R).

MACHAERIUM BRASILIENSE Vogel var. ERIANTHUM (Bentham) Rudd, comb. nov.

Machaerium erianthum Bentham, Comm. Leg. Gen. 35. 1837 (pre-print); Ann. Wiener Mus. 2: 99. 1838. Type: J. E. Pohl s. n. or H. W. Schott s. n., Brazil, without exact locality (lectotype K ex herb. Bentham "Pohl"; isotypes F "Schott", F photo 2281 ex B "Pohl", K ex herb. Hooker without collector's name, NY "Schott", US "Schott", W "Schott"). All of these specimens appear to be of the same gathering. Unfortunately, according to Urban (in Martius, Fl. Bras. 1(1): 82. 1906), it is not always possible to know which sheets were collected by Pohl and which by Schott. Because Bentham cited Pohl as collector, the specimen formerly in his personal herbarium, so annotated, has been selected as lectotype.

MACHAERIUM CONZATTII Rudd, sp. nov.

Species lignea ut videtur M. cuspidato Kuhlmann & Hoehne sed floribus minoribus, indumento fulvo vel bruneo differt.

Tree ? shrub ? liana ? apparently unarmed; young stems fulvo-tomentulose; stipules deltoid, 3-5 mm. long, 1-3 mm. wide, puberulent, glabrescent; leaves 5-7-foliolate, the axis tomentulose, 9-13 cm. long; leaflets ovate to elliptic, 5-10 cm. long, 2.5-4.5 cm. wide, acuminate, rounded at the base, the surfaces tomentulose, the upper surface somewhat glabrescent, the venation penninreticulate, moderately conspicuous; inflorescences axillary and terminal, paniculate, the axes brown-tomentulose; bracts deltoid, acute, pubescent, 1-8 mm. long, 0.5-3 mm. wide; bracteoles pubescent, ovate, obtuse, 3 mm. long, 3 mm. wide; flowers 8-10 mm. long; calyx 5-6 mm. long, about 4 mm. in diameter, striate, tomentulose, the lobes obtuse, about 1 mm. long; petal color not known, the vexillum pubescent on the outer face; fruit not known.

Type: C. Conzattii & I. C. Gómez 3516, México, Oaxaca, Cuicatlan, Río Seco, 600 m. elev., 19 April 1919 (holotype US; isotype US).

MACHAERIUM FLUMINENSE Rudd, sp. nov.

Arbor ? M. incorruptibili (Vellozo) Bentham affinis sed differt foliolis circa triplo majoribus longitudine et latitudine, floribus sericeis.

Tree ? apparently unarmed; young stems subglabrous; stipules (bud scales) deltoid, acute, 2.5 mm. long, 1.5 mm. wide at the base, caducous; leaves 11-15-foliolate, the axis about 8-15 cm. long, glabrous or puberulent; leaflets subcoriaceous, lanceolate-oblong, 3-6.5 cm. long, 0.5-1.5 cm. wide, acute, the base rounded to cuneate, the margin sometimes slightly revolute, the upper surface glabrous, the lower surface moderately puberulent with short, appressed or subappressed hairs, the venation penni-reticulate; inflorescences axillary, the axes fulvo-tomentulose; bracts deltoid, acute, 3-4 mm. long, 2 mm. wide; bracteoles semi-orbicular, obtuse, about 2 mm. long and wide; flowers about 8 mm. long; calyx fulvo-sericeous, 4 mm. long, 2.5 mm. in diameter, the teeth subacute, about 1 mm. long; petal color not known, probably purplish, the vexillum fulvo-sericeous on the outer face; fruit winged, fulvo-subsericeous, 6.5-9 cm. long including stipe about 5-8 mm. long, the body 1.5-2 cm. long, 1.2-1.5 cm. wide, the wing 5-6 cm. long, 2.5-3 cm. wide.

Type: A. Glaziov 5807, Brazil, Rio de Janeiro, Morro do Viração, 28 December 1871 (holotype P; isotypes G, K, P). Paratype: Brazil, "Rio Janeiro," Wilkes Expedition s. n. (US).

MACHAERIUM FROESII Rudd, sp. nov.

Frutex scandens, M. amplo Bentham affinis sed floribus minoribus et foliolis numerosioribus differt.

Liana or scandent shrub, to about 30 m. high or more; young stems puberulent, glabrescent; stipules spinescent, indurated, reflexed, about 2-12 mm. long, 1-3 mm. wide at the base; leaves 13-27-foliolate, the axis 6-17 cm. long, puberulent, sometimes glabrescent; leaflets elliptic to elliptic-oblong, 1.5-3.5 cm. long, 0.7-1.5 cm. wide, obtuse or emarginate, the base rounded, the upper surface glabrous, the lower surface puberulent with lax hairs, usually glabrate at maturity, the venation crebrous; inflorescences terminal, paniculate, the axes puberulent, glabrescent; bracts deltoid, spinescent, 1-3 mm. long, 0.5-1.5 mm. wide; bracteoles elliptic to obovate, obtuse, puberulent, 1 mm. long or less, 1-1.5 mm. wide; flowers 7-9 mm. long; calyx 3-4 mm. long, 3 mm. in diameter, puberulent; petals lavender, pink, or whitish, the vexillum pubescent on the outer face; fruit (submature) winged, essentially straight, puberulent, glabrescent, 5-6.5 cm. long including stipe about 4-6 mm. long, the body 1.5 cm. long, 0.6 cm wide, the wing 3 cm. long, 1 cm. wide.

Type: R. L. Fróes 30380, Brazil, Pará, Monte Alegre, "margem da estrada de rodagem para a Colônia da Mulata", 25 September 1953 (holotype IAN no. 80526). Paratypes: Brazil: Pará; Faro, Ducke 3716 (BM). Amazonas: Manaus, Ducke 2138 (IAN, R); Rodrigues & Coelho 2400 (US).

MACHAERITUM HUANUCOENSE Rudd, sp. nov.

Species scandens, M. villosa Vogel ut videtur affinis sed differt floribus majoribus, foliolis paucioribus cum venis paucioribus et pube minus conferta.

Liana 8-9 m. long, apparently unarmed; young stems tomentulose, glabrescent, with prominent lenticels; stipules not seen; leaves 11-13-foliolate, the axis 15-17 cm. long, fulvo-tomentulose; leaflets subcoriaceous, ovate to lanceolate-elliptic, 4-11 cm. long, (1.5-) 2-3 cm. wide, acuminate, the base rounded to acute, the upper surface glabrous, the lower surface puberulent, the venation penni-reticulate with secondary veins about 10-12 pairs; inflorescences axillary or terminal, paniculate, the axes fulvo-tomentulose; bracts deltoid, acute, pubescent, 1-2 mm. long, 1-1.5 mm. wide; bracteoles pubescent, broadly ovate, obtuse, 1.5-2 mm. long and wide; flowers 8-11 mm. long; calyx fulvo-sericeous, 4 mm. long, 3 mm. in diameter, the lobes obtuse, 1 mm. long or less; petals pale purplish-pink, the vexillum sericeous on the outer face; ovary fulvo-villous; fruit not seen.

Type: J. Schunke V. 5895, Peru, Huánuco, west of Tingo María, 672 m. alt., 3 May 1962 (holotype US no. 2639619; isotype F).

Local name: Huasco barbasco.

MACHAERITUM MUTISII Killip ex Rudd, sp. nov.

Arbor, M. inundata (Martius ex Benth) Ducke affinis sed differt fructibus alatis, foliolis majoribus, plerumque indumento ferrugineo.

Tree, apparently unarmed; young stems tomentulose, glabrescent; stipules not seen; leaves 5-7-foliolate, the axis tomentulose, glabrescent, 11-15 cm. long; leaflets coriaceous, elliptic to ovate or obovate, 6-11.5 cm. long, 4-6.5 cm. wide, acuminate, the base rounded to acute, the upper surface glabrous, nitid, the lower surface glabrous or nearly so, the petiolules puberulent, the venation penni-reticulate; inflorescences axillary, the axes ferrugineo-tomentulose; bracts deltoid, acute, 1.5 mm. long, tomentulose; bracteoles ovate to suborbicular, obtuse, 1.5 mm. long, 1-1.5 mm. wide, tomentulose; flowers 8-10 mm. long; calyx ferrugineo-tomentulose, 4-4.5 mm. long, 3-3.5 mm. in diameter; petals purple, the vexillum pubescent on the outer face; fruit winged, essentially straight, or slightly bent, minutely ferrugineo-velutinous, 11-12 cm. long including stipe 5-10 mm. long, the body 2-2.5 cm. long, 1.5 cm. wide, the wing about 9 cm. long, 2 cm. wide.

Type: J. C. Mutis 4680, Colombia, without exact locality or date [possibly in the vicinity of Mariquita, Tolima] (holotype US no. 1561022; isotype MA). Paratypes: Colombia, without exact locality, Mutis 2338 (MA, US), 2927 (MA, US), 2932 (MA, US), 4298 (MA, US), 4678 (US).

MACHAERIUM PARVIFOLIUM Killip ex Rudd, sp. nov.

Arbor vel frutex scandens, M. seemannii Benthani affinis sed differt foliolis floribusque minoribus, fructibus aliquantum geniculatis.

Tree or liana, apparently unarmed; young stems ferrugineo-tomentulose, glabrescent; stipules not seen; leaves (7-) 11-15-foliolate, the axis 3.5-4.5 cm. long, tomentulose; leaflets coriaceous, lanceolate or lanceolate-ovate, obtuse, acute, or brev acuminate, the base rounded, 0.5-2.5 cm. long, 0.3-0.8 cm. wide, the upper surface glabrous, nitid, the lower surface pubescent along the midvein, otherwise essentially glabrous, the venation reticulate, inconspicuous; inflorescences axillary, racemose, the axes fulvo-tomentulose; bracts deltoid, acute, tomentulose, about 1 mm. long and wide; bracteoles broadly ovate, obtuse, about 1 mm long, 1.5 mm. wide, tomentulose; flowers 6 mm. long; calyx fulvo-tomentulose, 3 mm. long, 2.5-3 mm. in diameter, faintly striate; petal color not known, possibly white to purplish, the vexillum pubescent on the outer face; fruit winged, minutely fulvo-pilose, usually bent at 60-90° angle, 6.5-7 cm. long including stipe 6-7 mm. long, the body about 2-2.5 cm. long, 1 cm. wide, the wing 4-5 cm. long, 1.5-1.8 cm. wide.

Type: J. Cuatrecasas 16081, Colombia, El Valle, Pacific Coast between El Aguacate and Quebrada de la Yuca, 10-40 m. alt., 8 February 1944 (holotype US no. 1853372; isotype F). Paratypes: Colombia: El Valle: La Trojita, Río Calima, Chocó region, 5-50 m. alt., Cuatrecasas 16260 (US). Santander: Barrancabermeja, highway to El Centro, 130 m. alt., Uribe 3974 (COL).

MACHAERIUM SUBRHOMBIFORME Rudd, sp. nov.

Arbor vel frutex scandens ut videtur M. inundato (Martius ex Benthani) Ducke, M. seemannii Benthani, etc. affinis sed foliolis subcoriaceis, subrhombiformibus, acuminatis differt.

Subscandent shrub or tree, about 5 m. tall; young stems puberulent; stipules not seen; leaves 7-foliolate, the axis 10-12 cm long, puberulent with subappressed hairs; leaflets subcoriaceous, subrhombiform, 5-9.5 cm. long, 2-4 cm. wide, acuminate, the acumens 1-1.5 cm. long, the base cuneate, the upper surface glabrous, the lower sparsely appressed-pubescent, especially along the midvein, otherwise glabrous, the venation penni-reticulate, inconspicuous; inflorescences axillary, paniculate, the axes pallid-sericeous; bracts pubescent, ovate, somewhat cucullate, 1-2 mm. long, 1.5 mm. wide, acute; bracteoles broadly ovate, obtuse, pallid-sericeous, 1.5 mm. long and wide; flowers 8-9 mm. long; calyx pallid-sericeous, striate, about 4 mm. long, 3 mm. in diameter, the lobes obtuse, about 0.5 mm. long; petals white and lavender, the vexillum sericeous on the outer face; fruit not known.

Type: J. Steinbach 6772, Bolivia, Santa Cruz, Sara, "bosques del río Quimori", 400 m. elev., 19 December 1924 (holotype F no. 563844; isotypes A, BM, G, GOET, K, MO, S, UC, W).

MACHAERIUM CUZCOENSE Rudd, sp. nov.

Arbor, aspectu M. millei Standley sed differt stipulis spinulentibus, floribus majoribus et fructibus latioribus cum stipite breviora.

Tree, about 4 m. tall; young stems tomentulose, glabrescent; stipules spinulent, recurved, about 4 mm. long, 2 mm. wide at the base; leaves 13-15-foliolate, the axis 10-12 cm. long, fulvo-tomentulose; leaflets elliptic to elliptic-oblong, 2-5 cm. long, 1-2 cm. wide, the apex subacute, the base cuneate to rounded, the upper surface puberulent, the lower surface tomentulose, densely so along the midvein, the venation penni-reticulate; inflorescences axillary, racemose, the axes fulvo-tomentulose; bracts and bracteoles caducous, not seen; flowers about 8 mm. long; calyx fulvo-tomentulose, 3 mm. long, 3 mm. in diameter, the lobes obtuse, about 1 mm. long; petal color not known, the vexillum pubescent on the outer face; fruit winged, puberulent at the base, otherwise glabrous, bent almost to a right angle, about 6-6.5 cm. long including stipe 7-8 mm. long, the body about 2 cm. long, 1-1.3 cm. wide, the wing about 3.5 cm. long, 1.8-2 cm. wide.

Type: R. Chavez 423, Peru, Cuzco, Convención, Rosario Mayo, in sub-xerophytic habitat, 1300 m. alt., 28 January 1969 (holotype F no. 1671469).

MACHAERIUM URIBEI Rudd, sp. nov.

Species scandens, M. bondaensi Pittier et M. capote Triana ex Dugand affinis sed differt floribus fructibusque majoribus.

Liana climbing on tall trees, apparently unarmed; young stems tomentulose; stipules (bud scales) deltoid, 3 mm. long, 2.5 mm. wide, acute; leaves 19-23-foliolate, the axis tomentulose, 12-15 cm. long; leaflets elliptic to elliptic-oblong, 2-5 cm. long, 1-2 cm. wide, acute to obtuse, the base rounded, the surfaces puberulent, glabrescent, the venation penni-reticulate; inflorescences racemose, the axes fulvo-tomentulose; bracts deltoid, pubescent, about 3-4 mm. long, 2.5-3 mm. wide at the base; bracteoles caducous, not seen; flowers probably about 8-9 mm. long; calyx tomentulose but glabrescent at the base, 4 mm. long, 3 mm. in diameter, the teeth deltoid, about 1 mm. long; petals not seen; stamens 7-8 mm. long, apparently diadelphous 5:5, the anthers elliptic, about 0.5 mm. long; fruit winged, puberulent and somewhat setose, glabrescent, 7-8 cm. long including stipe 5-6 mm. long, the body about 2 cm. long, 0.9-1.0 cm. wide, the wing 4.5-5.5 cm. long, 1.5-1.8 cm. wide.

Type: L. Uribe Uribe 1572, Colombia, Cundinamarca, Pacho, Hacienda "Fatasia", about 1700 m. alt., 26 May 1947 (holotype US no. 1901280).